

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An ~~immunogen~~ immunizing composition for inducing an immune response to a desired antigen protein, ~~the immunogen~~ comprising:

an adjuvant; and

a fusion protein immunogen composed of one selected from the full-length and a part of the antigen protein and a chaperonin comprising a plurality of chaperonin subunits, wherein: ~~one~~ ~~selected from a folding factor and its subunit linked thereto via at least one peptide bond~~

at least two of the chaperonin subunits are serially linked to one another via peptide bonds; and

the antigen protein is accommodated in a chaperonin ring formed by the chaperonin subunits.

Claims 2-38 (Cancelled)

39. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, wherein the antigen protein

is linked to the N-terminus and/or the C-terminus of the chaperonin subunit.

40. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, wherein the antigen protein is linked between the chaperonin subunits.

41. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, ~~being~~ wherein the immunogen is provided with an amino acid sequence to be cleaved by a protease between the chaperonin subunit and the antigen protein.

42. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, ~~being~~ wherein the immunogen is provided with an amino acid sequence to be cleaved by a protease between the chaperonin subunits.

43. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, wherein the chaperonin subunit is derived from one selected from a group consisting of bacteria, archaea and eukaryotes.

44. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, wherein the antigen protein is serotonin receptor 5-HT1aR.

45. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim 44, wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more contiguous amino acid residues thereof.

46. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~38~~ 1, wherein the immunogen is being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from ~~the folding factor and its subunit~~ a chaperonin comprising a plurality of chaperonin subunits.

47. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim 46, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more contiguous amino acid residues of the antigen protein.

Claim 48 (Cancelled).

49. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~48~~ 1, wherein the chaperonin ring ~~is consisting~~ consists of 5 to 10 chaperonin subunits.

50. (Currently amended) The ~~immunogen~~ immunizing composition as defined in claim ~~48~~ 1, having two chaperonin rings non-covalently associated on each other's ring plane or each other's side.

51. (Withdrawn-Currently amended) ~~The An immunogen as defined in claim 1, wherein the folding factor is a foldase for inducing an immune response to a desired antigen protein,~~
comprising:

a fusion protein composed of one selected from the full length and a part of the antigen protein and one selected from a foldase and its subunit linked thereto via at least one peptide bond.

52. (Withdrawn) The immunogen as defined in claim 51,

wherein the antigen protein is linked to the N-terminus and/or the C-terminus of the foldase.

53. (Withdrawn) The immunogen as defined in claim 51, wherein the antigen protein is serotonin receptor 5-HT1aR.

54. (Withdrawn) The immunogen as defined in claim 53, wherein the fusion protein comprises either the full-length of serotonin receptor 5-HT1aR or a partial protein consisting of 6 or more amino acid residues thereof.

55. (Withdrawn) The immunogen as defined in claim 51, being produced by transcription and translation of a fusion gene comprising a gene encoding one selected from the full-length and a part of the antigen protein and a gene encoding one selected from the folding factor and its subunit.

56. (Withdrawn) The immunogen as defined in claim 55, wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

57. (Withdrawn) The immunogen as defined in claim 51,

wherein the foldase is a PPIase.

58. (Withdrawn) The immunogen as defined in claim 57,
wherein the PPIase is derived from one selected from a group
consisting of Escherichia coli and archaea.

59. (Withdrawn) The immunogen as defined in claim 57,
wherein the antigen protein is serotonin receptor 5-HT1aR.

60. (Withdrawn) The immunogen as defined in claim 59,
wherein the fusion protein comprises either the full-length
of serotonin receptor 5-HT1aR or a partial protein consisting of
6 or more amino acid residues thereof.

61. (Withdrawn) The immunogen as defined in claim 57,
being produced by transcription and translation of a fusion
gene comprising a gene encoding one selected from the full-length
and a part of the antigen protein and a gene encoding one
selected from the folding factor and its subunit.

62. (Withdrawn) The immunogen as defined in claim 61,

wherein the gene encoding a part of the antigen protein is a gene encoding a partial protein consisting of 6 or more amino acid residues of the antigen protein.

Claims 63-65 (Cancelled).

66. (Withdrawn) A composition for immunological use, being prepared by mixing of the immunogen as defined in claim 51 with an adjuvant.

67. (Withdrawn) A composition for immunological use, being prepared by mixing of the immunogen as defined in claim 57 with an adjuvant.

68. (Withdrawn-Currently amended) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the ~~immunogen~~
immunizing composition as defined in claim 1, and

obtaining an antibody specific to the antigen protein from the animal.

Claims 69 and 70 (Cancelled).

71. (Withdrawn) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the immunogen as defined in claim 51, and

obtaining an antibody specific to the antigen protein from the animal.

72. (Withdrawn) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the immunogen as defined in claim 57, and

obtaining an antibody specific to the antigen protein from the animal.

Claims 73-75 (Cancelled).

76. (Withdrawn) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the composition as defined in claim 66, and

obtaining an antibody specific to the antigen protein from the animal.

77. (Withdrawn) A method of producing an antibody, the method comprising the steps of:

immunizing an animal except human with the composition as defined in claim 67, and

obtaining an antibody specific to the antigen protein from the animal.